

Weekly Report – week of October 10th, 2011
Fabrication and Assembly of ERL hardware
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Controls: The ADO configuration setup was completed for a new VME board for the Beam loss monitor. It will be used in the cold emission test which will be performed next week. Development work continues for an ADO temperature monitoring VME.

Cryogenics:

CryoControls: Instrumentation install for the SRF Gun module will be done once the cryostat is in place.

Electric feeds: 120 VAC quad drops at plant area complete. The 480 feed to the VFD brake still requires connection.

Cryo System: FMEA (Failure Mode Effect Analysis) is almost completed.

Wet expander: The belt is to be scheduled for installation.

LN2 Storage Dewar: Preparing for a splash test for the dewar to check out valves and lines with LN2 in the dewar. Dewar insulating Vacuum has been holding very well.

Cryogenic transfer lines to ERL cryomodels: Installation will very likely be a December start.

Cryogenic transfer lines to ERL cryomodels, piping supports: The engineering and design for the piping supports for these lines continues.

Sullair compressor: The relief line from inside of the building to outside still requires installation.

A review meeting has been scheduled with the Labs safety committee

SRF Gun Cryomodel interfaces: The relief header system materials requisition has been placed.

SRF Gun Cryomodel cryo instrumentation: Installation of temperature sensors as the cryostat build-up continues.

ERL injection line: The upstream Solenoid chamber is installed. The mirror mount work continues.

Gun Cryomodel/5-cell cavity: One of the latest FPC gaskets has been installed and is being studied for proper seating. The Gun string is expected to be released for cryomodel construction next week. The Gun stand has been assembled and painted.

Laser: The safety envelope documentation for the laser has been updated and approved. Preparing for RF tests of locking system during the next cool-down. In-vacuum laser mirror assembly delayed approximately one week, as engineering issues have arisen with the mirror retention mechanism, and may require re-making some small parts.

Large Grain Gun: The project estimate for the large grain testing program is nearly completed and requires a few revisions and clarifications. The work on assembly of

the vacuum system is in the early stages, and we are in process of collecting all parts and planning assembly work. The magnetic measurements on the dewar have been completed. These measurements show that the magnetic field is reduced by about a factor of 100 at the location of the cavity, consistent with expectations for the magnetic shielding. Discussions with AES have commenced on redesign and fabrication of a vertical test cathode. We plan on redesigning the cathode to eliminate the ceramic break and to fabricate the cathode weldment in copper. AES will fabricate the parts and complete the assembly. We are currently working with D. Holmes to obtain a price quotation and time estimate.

Mezzanine: The contractor is scheduled for next week to install leg extensions on the mezzanine to accommodate the new ceiling height requirements.

Photocathode: Initial cathode cart assembly is complete and leak checked. It will now be surveyed under vacuum and the results used to “tune” cathode position during insertion. The parts for the Metal cathode laser cleaning chamber have been delivered for assembly in bldg. 966. The manually operated vacuum valve for the metal cathode laser cleaning chamber will be delayed as it needs to be broken down for cleaning. Major parts of the deposition system have been baked out and returned for assembly. The mechanical valves for this system will be also be broken down and cleaned with acetone.

Project Controls: The input was received for the Large Grain Cavity, and work continues on resource loading the schedule.

Vacuum:

1. Detail design of the ERL zigzag chambers continues. Drawings have gone through the first round of checking. A request to Accelerator Physics to decrease horizontal aperture is under consideration to improve mechanical design for support requirements. Procurement documents are generated and being reviewed. An RFQ is expected within a month.
2. The double solenoid chamber immediately upstream of the 5-cell is installed. The portable clean room tent has been dismantled and removed from the beam line.
3. Survey has marked the Laser transport beam line and optics tower. All components staged and are awaiting anchor drilling which will be followed by transport line installation.
4. Laser mirror holder ring shims from Central Shops processed and installed with test mirror. Differences in the actual mirror frame and spare will result in some additional adjustments to the assembly.
5. Designing an alternate e-gun HOM Damper impedance bridge between the ceramic and metal cuffs. May be pursued in parallel to the conductive painting option. Either solution will still require sputter coating of the ceramic.
6. 2 pepper pot assemblies have undergone preliminary inspection and are staged for UHV and PF QA in the 905 clean room.

7. The FPC seals were modified as per the ANSYS analysis done to minimize the seal force at the RF contact point. The first seal was installed and sealed.
8. The cleaning and firing of the deposition chamber parts are 90% complete.